

8. Violeta

Program Name: Violeta.java

Input File: violeta.dat

Violeta loves palindromes. A palindrome is a word that is the same forwards and backwards. As her fascination with them has continued, she has started noticing them more and more often. She has actually started believing that palindromes are everywhere. She has recruited you to write a program to identify the longest palindrome you can find in any given string so she can see if palindromes are indeed as common as she believes them to be.

Input: The first integer will represent the number of data sets to follow. Each data set will contain one line (with no spaces) of the word Violeta wants you to search.

Output: Each data set should have an output that is the longest palindrome found in the input string.

Assumptions: It's a big world out there, and the string Violeta gives you may not be small, so your palindrome finding program may have to be efficient to finish in a reasonable amount of time. It is guaranteed that there will always be a unique "longest length" palindrome, and that each output will be unique and be at least one character in length.

Sample Input:

```
3
abkjlkd fja123456789987654321fewrwe fdsf ds
beautyandthebeastisagoodfilmthequickbrownfoxjumpedoverthelazydogggodyzalehtrevodepmujxo
fnworkbkc iugehtthicketofthebeast (this line is a continuation of the 2nd data set)
racardriversarereallycool
```

Sample Output:

```
123456789987654321
thequickbrownfoxjumpedoverthelazydogggodyzalehtrevodepmujxofnworkbkc iugeht
racar
```